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Synopsis of the ENDOMYCHIDÆ of the United States.

BY G. R. CROTCH, M. A., CANTAB.

Tarsi subtetramerous or tetramerous, head narrowed behind the eyes, clypeus distinct, antennæ inserted on the front, generally elongate; maxillary palpi with the last joint subcylindrical; thorax trisulcate at the base, meso-epimera rhomboidal, meta-episterna in part obliquely truncate; anterior coxæ globose, cavities open, femora not grooved to receive the tibiæ, claws simple; larvæ fungivorous.

The species resemble *Coccinellidæ* in their tarsal structure, but are at once known by their cylindrical palpi and long antennæ. The family should follow *Mycetophagidæ* in systematic position.

Of the 9 genera composing the family 5 are common to Europe, and one species, *Mycetæa hirta*, is identical. Two other species, *Mycetina perpulchra* and *Endomychus biguttatus*, are also closely allied to these European representatives. Two genera, *Phymaphora* and *Rhanis*, are peculiar to North America, *Epipocus* extends southward to New Granada, *Stenotarsus* is found everywhere in the tropics. The group has been carefully monographed by Gerstaecker in 1858.

- A. Tarsi sub-tetramerous, third joint very minute.....ENDOMYCHIDES.
 - B. Ligula transverse, emarginate or truncate.....DAPSINI.
 - C. Anterior coxæ contiguous.....**Lycoperdina.**
 - C 2. Prosternum extending behind the coxæ.
 - D. Thorax with no lateral impressed line.
 - E. Thorax with a deep transverse impression at the base...**Mycetina.**
 - E 2. Thorax simple.....**Epipocus.**
 - D 2. Thorax with an impressed lateral line.....**Stenotarsus.**
 - B 2. Ligula oblong, apex rounded.....ENDOMYCHINI.
 - C. Maxillary palpi with the last joint broad.....**Endomychus.**
 - A 2. Tarsi distinctly tetramerous.....MYCETÆIDES.
 - B. Anterior coxæ contiguous.....**Rhanis.**
 - B 2. Coxæ separated by the prosternum.
 - C. Thorax narrow, sub-quadrate; antennæ dilated in ♂...**Phymaphora.**
 - C 2. Thorax transverse, with a lateral impressed line
 - D 1. Antennæ 11-jointed, form oval.....**Mycetæa.**
 - D 2. Antennæ 10-jointed, form globose.....**Alexia.**

LYCOPERDINA, Latr. (1807). (Type *bovistæ*.)

L. ferruginea, Lec. Ann. Lyc. i., p. 172; Proc. Phil. vi., p. 360, 1; Gerst. Endom., p. 210, 1.—Pitchy-black, finely punctulate, antennæ, head, legs, mar-

gins of the thorax and elytra brownish-red; scutellum broad, semicircular. ♂ anterior tibiæ dentate within. L. .19—.21 inch.

Middle and Southern States.

MYCETINA, Muls. (1846). (Type *cruciata*.)

M. perpulchra, (Newm.) Ent. Mag. v., 390; Lec. Proc. Phil. vi., 359, 1; Gerst. End., p. 232, 2.—Glabrous, shining, black, thorax red with a discoidal vitta black; elytra black, each with a red spot; antennal club with the first joint oblong, mesosternum broader than long, pentagonal; ♂ anterior and posterior tibiæ angulate within. L. .16 inch.

Middle, Southern and Western States.

M. Hornii, sp. nov.—Sub-ovate, ferruginous-red, thorax with the disc infusate, sparingly punctate, the longitudinal impressions deep, the transverse impression very faint; elytra black, clearly and evenly punctate, each with a bright fulvous red spot, one humeral triangular, one sub-apical rounded. L. .16 inch.

California, Oregon. Allied to *M. perpulchra*, but differing by the triangular humeral spot.

M. testacea, Lec. Proc. Phil. vi., 359, 2; Gerst. Endom., p. 234, 4.—Obscure ferruginous, clothed with yellow hairs, shining; head and sides of thorax yellowish, club of antennæ infusate, antennal club loosely jointed, mesosternum quadrangular. L. .15 inch.

Middle and Southern States.

M. vittata, (Fab.) Mant. i., 44, 4; Gerst. End., 237, 6; *lineatus*, (Oliv.) Ent. vi., p. 1072; (Lec.) Proc. Phil. vi., 358, 5.—Glabrous, shining, bright red, antennæ pitchy, last joint ferruginous; elytra with a common sutural vitta and each with a lateral vitta black. L. .25 inch.

Middle and Southern States.

M. læta, (Lec.) Proc. Phil. vi., 358, 4; Gerst. Endom. 239, 7.—Elongate, ferruginous, shining, elytra finely punctate, bluish-black, base apex and epipleuræ yellow; femora clavate, antennæ black. L. .32.

San Francisco, Oregon.

M. morosa, Lec. Proc. Phil., 1859, p. 82.—Elongate, pitchy-black, shining, thorax scarcely punctulate, a little shorter than broad, disc concave, unequal, basal impression very deep, elytra rather broader than the thorax, elongate oval, visibly punctate. L. .27 inch.

Fort Tejon, California.

M. pallida, Horn, Trans. Am. Ent. Soc., i., 96.—Elongate, pale rufo-testaceous, moderately shining; thorax sparsely and very finely punctured, longitudinal and basal impressions well marked; elytra less shining, very finely but sparsely punctate and with minute hairs; prosternum narrower, depressed. L. .26 inch.

Colorado. Closely allied to *M. morosa*, from which it differs only by the color and punctuation.

M. limbata, Horn, Trans. Am. Ent. Soc., i., 96.—Piceous-black, shining; finely and sparsely punctate, very sparsely pubescent, thorax not deeply impressed; elytra with the external margin and a central fascia not reaching the suture testaceous; antennæ, palpi and legs ferruginous; body beneath black, coarsely punctate. L. .18 inch.

California.

EPIPOCUS, Germ. (Type *tibialis*.)

E. cinctus, Lec. Proc. Phil. vi., 358, 1; Gerst. Endom., 246, 4.—Ferruginous, thorax with two discoidal marks, and two lateral dots, black, sides closely, disc vaguely and deeply punctate, with the disc deep black. ♂ anterior tibiæ angulate within. L. .4 inch.

Texas.

E. mutilatus, Gerst. Endom., 249, 7.—“Ferrugineo-transpese, abdomine nigro-maculato, elytris apice recte truncatis, confertim punctatis, thorace disco punctisque duobus lateralibus nigris, medio fortius, lateribus crebrius punctato. L. 4 lin.”

Var. Abdomine piceo, basi apiceque ferrugineo.

Texas. (Dohrn.) Mexico.

E. punctatus, Lec. Proc. Phil. vi., 358, 2; Gerst. Endom., 252, 9.—Ferruginous, elytra with the disc black, apex sub-truncate, coarsely and closely punctate; thorax with two rounded spots on the disc. L. .25 inch.

Georgia.

E. bivittatus, Gerst. Endom., 253, 10.—Rufo-ferruginous, antennæ with joints 5—10 black; thorax with two spots, elytra with a vitta narrowed in front, black; elytra closely punctate, apex sub-truncate. L. 2½ inch.

Tennessee. (Dohrn.) South Carolina.

E. discoidalis, Lec. Proc. Phil., p. 358, 3; Gerst. Endom., 254, 11.—Ferruginous, thorax obsoletely spotted, elytra coarsely punctate, disc broadly black, antennæ thin with the third joint elongate, equal to the fourth and fifth. L. .25 inch.

Texas.

E. unicolor, Horn, Trans. Am. Ent. Soc., i., 96.—Rufo-ferruginous, sparsely clothed with golden hairs, thorax with the disc coarsely and rather sparsely, sides more closely punctate; elytra obliquely truncate, equally not coarsely punctate. ♂ anterior tibiæ with a minute spur. L. .22—28 inch.

Colorado, Camp Grant, Arizona.

STENOTARSUS, Perty, (1831). (Type *brevicollis*.)

S. hispidus, (Herbst.) Käfer. viii., 374, 16; (Lec.) Proc. Phil. vi., 359, 3; Gerst. End., p. 326, 24.—Sub-parallel, rufo-ferruginous, pilose, antennæ with the last five joints and the disc of the elytra black; thorax transverse. L. .15—18 inch.

Var. Suture black.

ENDOMYCHUS, (Hellwig) 1795. (Type *coccineus*.)

E. biguttatus, Say, J. Acad. Phil. iv., 96; Lec. Proc. Phil. vi., 359, 1; Gerst. End., 376, 4.—Bright red, head, antennæ, thorax, scutellum, elytra with two spots and legs black. L. .16 inch.

Middle, Southern and Western States.

Differs from *E. coccineus* by the basal impression which is close to the hind margin.

RHANIS, Lec. (1854). (Type *unicolor*.)

Rh. unicolor, (Ziegl.) Proc. Phil. ii., 272, 2; Lec. Proc. Phil. vi., 360, 1; Gerst. End., 394, 1.—Narrow, sub-parallel, almost glabrous, shining, red, elytra black, shoulders and apex red, rather finely punctate. L. .14 inch.

Middle and Southern States.

PHYMAPHORA, Newm. (1837). (Type *pulchella*.)

Ph. pulchella, Newm. Ent. Mag. v., 389; Lec. Proc. Phil., 360, 1; Gerst. End., 397, 1.—Oblong, red, glabrous, shining, thorax with a discoidal spot, elytra with two fasciæ (one before, one behind the middle) black. L. .15 inch.

Middle and Southern States, Canada, California.

MYCETEA, Stephens, (1831). (Type *hirta*.)

M. hirta, (Msh.) Ent. Brit.—Oval, pointed behind, uniform yellow-testaceous, deeply serrate punctate, clothed with erect pubescence arranged in rows. L. .5—6 inch.

Baltimore, New York.

ALEXIA, Steph. Man., p. 99, 132. (Type *polifera*.)

This genus is well described and figured by Duval (t. ii., p. 225, pl. 55, f. 275), except that the antennæ are figured as 9-jointed on one side and 10-jointed on the other. I quite agree with him that it must be associated with *Mycetæa*, but *Lithophilus* is a decided Coccinellid in all respects.

Convex, pubescent, punctate, thorax deeply impressed on either side; labrum prominent, truncate; antennæ 10-jointed (the 8th being lost), club abruptly 3-jointed, last joint largest; prosternum narrow, separating the coxæ bisulcate; tarsi distinctly 5-jointed, the last longer than the other three together.

A. Ulkei, sp. n.—Sub-hemispherical, globose, shining, coarsely punctate, pubescent, pale reddish-brown, elytra black, margins and suture narrowly paler, antennæ with the club black; thorax obsoletely punctulate, disc brown, deeply impressed on either side at the base, which is margined. L. .7 inch.

Washington. (Ulke.)

A. minor, sp. n.—Very near to *A. Ulkei*, but uniformly testaceous, smaller and less globose, elytra less reflexed at the margin. L. .6 inch.

Washington. (Ulke.) Illinois, Georgia, Louisiana.

This may be the insect indicated by Motschulsky, as *Hygrotophila testacea* from Georgia.

As a supplement to the preceding paper I wish to record the occurrence of the genus *Myrmecoxenus*, Chev., in the United States. It resembles *Mycetæa* in some respects, having 4-jointed tarsi, but the 1st joint is longer than the second; the anterior coxal cavities are closed, the antennæ 11-jointed with a 5-jointed club, the 2d joint is not larger than third. Epipleuræ extending to the apex of elytra, pygidium exposed. The whole facies is that of a *Corticaria*.

M. latridioides, sp. n.—Elongate, reddish-brown, finely pubescent, thorax quadrate, sides crenulate, closely punctulate; elytra with the sides rounded, more visibly punctulate than the thorax; prosternum roughly punctate; ventral segments black, punctulate. L. .7 inch.

This genus ought to be placed in the *Mycetophagidæ*; it is found in ants nests and about hot-beds in Europe.

Revision of the COCCINELLIDÆ of the United States.

BY G. R. CROTCH, M. A., CANTAB.

Anterior coxal cavities closed.

Antennæ as long as head and thorax, surface glabrous.....COCCINELLIDES.

Antennæ very short, hardly longer than the front.

Genæ produced, broadly margining the eyes, glabrous.....CHILOCORIDES.

Abdomen with seven segments in the ♂, glabrous.....HYPERASPIDES.

Pubescent, epipleura of elytra not foveolate.....SCYMNIDES.

Anterior coxal cavities open, antennæ longer than thorax.....COCCIDULIDES.

COCCINELLIDES.

A. Thorax sub-transverse, base sinuate.

Mesocoxal line wanting.

Claws bifid.

Thorax margined at base.....HIPPODAMIA.

Thorax partially margined.....ERIOPIA.

Thorax not margined.....ADONIA.

Claws dentate, thorax margined.

Antennæ simple.....MEGILLA.

Antennæ with third joint dilated.....CERATOMEGILLA.

Mesocoxal line distinct, claws simple.....ANISOSTICTA.